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Some Thoughts on the Tuberculosis Problem.*

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In deciding to bring this subject before you, I was influenced by the consideration that my opportunities for reporting observations of practice in its narrower sense are limited. Of veterinary matters which might form the subject of discussion amongst us I am restricted to those which occupy the greater portion of my time, and of these I feel that the tuberculosis problem is pre-eminent.

The tuberculosis problem is tremendous in its scope, and by the ability and zeal of our profession to deal with that part of the problem which is purely veterinary shall we be judged by the public, and, if the verdict goes against us, one of the penalties we may expect to receive as the reward for our unprofitable service is the abolition of our one portal system of entrance into the profession. Public opinion will gradually determine our status in public health matters, and it is our duty favourably to influence that opinion by the means at our disposal. Propaganda through the press is a factor not to be despised, but to become really effective it requires to be backed up by conscientious service on our part. In this work, each one of us is an agent, and it is too often forgotten that the influence of the profession is the summation of the influences of its individual members.

I have been interested to notice how much space the press is devoting nowadays to reporting the medical conferences that have been held lately, and that is a sure index of the growing interest which their readers are taking in these matters.

It is difficult to grasp the immensity of the tuberculosis problem; we each see the havoc the disease causes in the lives of those people with whom we come in contact; the dissemination of the disease among our cattle patients is seldom absent from our minds.

The annual report of the Registrar General for Scotland records the number of persons who have died from tuberculosis of one form or other, but who can form an estimate of the toll it takes from our herds and the economic loss it causes? Statistics are not available. In Scotland during 1921, the latest year for which figures are procurable, deaths of human beings from tuberculosis numbered 5,737, about equally divided between males and females. This is the first year that the number has fallen below 6,000. In 1870 it was over 13,000, which is the largest number recorded since the institution of national registration in 1855. In other words, the death rate in people from tuberculosis of all kinds has fallen over fifty per cent. in the last fifty years. As you are aware, I cannot give you the corresponding figures for animals, but abattoir reports provide figures which, though not analogous, help us to form some idea of the widespread infection of tuberculosis in cattle. In the annual report of the Veterinary Department of the City of Edinburgh, the percentage incidence of tuberculosis in the cattle slaughtered there is given in Table A. I regret that I am unable to give you the corresponding figures for the City of Glasgow, as a similar report is not published. Mr. Trotter, however, informed me that any figures from Glasgow would not represent the state of the cattle in the West of Scotland, as there was a large number of Irish cows killed in Glasgow which were entirely free of tuberculosis. I cannot say to what extent, if any, the cows killed in Edinburgh represent the herds in the east of Scotland. The figures which I have quoted are based on macroscopic evidence, and also it is well to remember that the proportion of young cows in the above table would not be large.

The degree of infection which exists in the milking herds of the country is revealed by tuberculin tests, and only those who are engaged in this branch of practice can form an estimate. It is no exaggeration to say that sixty per cent. of the cows supplying milk in the West of Scotland to-day would react to the test. *A priori*, one might reasonably expect the herds of the country to show a diminishing rate in the incidence of tuberculosis; their lives are under control, food is generally abundant, only the fit are allowed to propagate the species, etc., etc. The fact that they do not exhibit a diminishing rate shows that "the degree of resistance against tuberculosis which is inherited is totally inadequate to enable them to withstand ordinary risks of infection." (M'Fadyean.) I wonder what time will elapse before our profession can point to a reduction in the incidence of tuberculosis in cattle comparable to the fall in the death rate from tuberculosis in man.

Thirty years have elapsed since Bang demonstrated the practicability of his methods of eradication, and papers on the subject have been read at many veterinary societies, so that the ordinary practitioner was well aware of what could be accomplished by adopting his plans, yet what was the result when, during the war, the Food Controller allowed a higher price for clean

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milk from tuberculin-tested herds? In Scotland there were twelve producers of milk able to take advantage of the offer, and in England fifty-seven. I realise that this does not mean that these were the only tubercle-free herds in the land. There were private herds of milk cows and larger herds of pedigree breeding cattle undoubtedly free, but still the figures are significant as showing to what extent dairymen had taken advantage of the knowledge that was available during the past generation. If the dairy farmers were not aware of the method, then I think their veterinary advisers were to blame. It is surprising that so few stockowners have realised the economic importance of ridding their herds of tuberculosis. Putting the average annual production per cow of a herd of milk-record Ayrshires at 800 gallons, the extra threepence per gallon for tubercle-free milk means ten pounds per cow added to his income, while the inherent value of his stock is at once raised to a higher level whether they are to be sold as dairy cows to supplement other tubercle-free herds or for slaughter with their guarantee against condemnation so far as tuberculosis is concerned.

Some practitioners have in the past taken the selfish view that a herd ceases to be remunerative to them once it becomes tubercle-free, and they have not in consequence suggested eradication to the owner. This is a very short-sighted view of the question, and reflects adversely on our profession. An owner who, through veterinary advice and skill, frees his stock from this scourge greatly increases its capital value, and also its revenue. The status of the profession is raised by the service rendered and the position of the individual member enhanced. The question of a suitable fee for such service is important. If it is fixed too high it may have the effect of keeping back some owners from embarking on the scheme, and on the other hand tuberculin-testing is skilled work demanding considerable time and knowledge, and surely these are worthy of adequate recompense. In view of the growing importance of this class of work it is just possible that the fees fixed by this association may stand in need of revision. The diminished value of cattle and altered financial position of our clients are items to be remembered when the matter comes up for consideration again.

Early in this paper I referred to that part of the tuberculosis problem which is purely veterinary, and it is to that part I would more particularly direct your attention. In our practices it is synonymous with tuberculosis of cattle and in veterinary public health with the effects of that disease on meat and milk. What relation does this part bear to the whole? One method of answering this question might be to find out what proportion of the deaths from tuberculosis in man is caused by the bovine type of tubercle bacillus. In an attempt to answer this question I would quote largely from a paper by Dr. A. Stanley Griffith, Research Bacteriologist to the Medical Research Council, read to the National Milk Conference in London last October. Dr. Griffith was engaged in the practical work of the Royal Commission, and since its report in 1907 the work has been carried on by several investigators, including himself. In the paper he reviews the results obtained in the investigation of 1,200 cases of human tuberculosis in which the type of the causal organism had been determined. The results are briefly summarised in Tables B and C.

Of *cervical gland tuberculosis* 154 cases were investigated, but in 38 cases which were undoubtedly tuberculous the glands failed to yield cultures; the disease in these cases had been arrested and the bacilli killed. With regard to age, the percentage of bovine infections was highest in children under five years old, and it decreased with advancing age. Infection in this case is generally by ingestion, and rarely is it part of a generalised tuberculosis.

In *tuberculosis of bones and joints* the lesion is always metastatic in origin, and is always produced by tubercle bacilli which have been disseminated by the blood stream, generally from a focus in another part of the body. In this connection it is interesting to note that the smaller series obtained from Scotland shows a rather higher percentage of bovine tubercle bacilli than the English series. In *lupus* the types were almost equally balanced, and no clinical difference was detected between cases caused by the human and bovine types.

In *scrofulodermia*, as in lupus, the disease makes its appearance mainly in childhood and youth, and as in the other varieties of surgical tuberculosis the percentage of bovine infections is highest in children under five years of age. From these figures it is seen that tuberculosis of bovine origin causes a considerable amount of disease and deformity in human beings, but the surgical forms of tuberculosis are not the forms that prove fatal. The next table shows the result of the investigation of the other forms of tuberculosis.

In 1912 the Local Government Board instituted an enquiry to ascertain what share bovine tubercle bacilli had in the mortality of children from tuberculosis. Material was obtained, post-mortem, from 223 children under twelve years of age who had died in institutions from any cause whatever and examined for the presence of tubercle bacilli. 113 cases were positive, and of these 20 were of the bovine strain. In 14 of these 20 tuberculosis was the cause of death, that is over six per cent. of the children had died from tuberculosis of bovine origin.

In the *Royal Commission series* the higher percentage of bovine infections is due to selection, as preference was given in the series to cases in which the portal of entry of the bacilli was presumably alimentary.

In the series of cases just given, that is, Local Government Board and Royal Commission, many of the children died of meningitis, but the cultures were not obtained from the meninges.

In the *series of cases labelled tuberculous meningitis* the original material was cerebro-spinal fluid withdrawn during life, and out of twelve cases two were

bovine in origin, and these were in children under ten years of age.

The *figures from pulmonary tuberculosis* are striking when compared with those from surgical tuberculosis or the tuberculosis of childhood. They show that the bovine type of tubercle bacilli is seldom the cause of phthisis.

With Dr. Griffith's results before us, it is interesting to look at the figures in Table D., which are extracted from the Registrar General's report for 1921. The classification of the different forms of tuberculosis differs somewhat, but the deaths from tuberculosis at the different age groups is shown clearly. Dr. Cobbelt, a fellow investigator of Dr. Griffith, has estimated from the series of cases I have quoted, Tables B. and C. that 6·44 per cent. of the total deaths from tuberculosis of all kinds in England and Wales are caused by bovine tubercle bacilli, and if the percentage shown in Table A for the Scottish series of bone and joint tuberculosis be taken as a guide, the figure for Scotland will be no less. In England and Wales this would mean that approximately 3,000 persons died in 1921 from tuberculosis of bovine origin, and in Scotland 369. The thought I would like to emphasise is that in Scotland one life each day is lost through bovine infection, and the victims are mostly children under ten years of age who are unable to do anything to protect themselves. The age incidence and anatomical distribution of the primary lesions clearly point to cows' milk as the source of infection by the bovine type. As veterinarians we can do a great deal to eliminate this cause of suffering and death in helpless children.

Regular veterinary inspection of all dairy cows is urgently called for to weed out early the cow with tuberculosis of the udder. You know how few authorities do this. The Milk and Dairies (Amendment) Act, 1922, provides some remedy, but it requires to be supplemented by the re-introduction of the Tuberculosis Order of 1914. Pressure will have to be applied to the Government before they will move, and I was glad to see that at the recent conference at York this aspect of the matter was emphasised by Mr. Gofton. Are we as veterinarians doing all we can with the means at our disposal to wipe out this scourge from our herds? It is in great measure a veterinary question. The eradication of tuberculosis is possible, and I am glad to say that the new Milk (Special Designations) Order is providing a valuable incentive towards this end. Since this Order came into force on 1st January last, twelve milk producers in Lanarkshire have obtained Grade A. (tuberculin-tested) licenses, and we have a list of fifteen who propose to take the initial steps by having their herds tested immediately the cows come in from the grass. These owners have been advised by us to have their herds submitted to the test by their private veterinary surgeon, and methods of eradication suitable to their varying circumstances have been suggested. They have been warned what to expect as the result of the test, but as they are all breeders they have been encouraged by the knowledge as to how their young stock may be reared clear of infection.

Many farmers with tubercle-infected herds believe they are eradicating the disease by purchasing only stock bulls that have passed the tuberculin test. In this they are encouraged by some veterinary surgeons. A tubercle-free bull that is brought home and stalled along with such a herd will almost inevitably contract the disease within a few months. Such a farmer would be much better employed investigating the milk records of the bull's dam and sire.

"A reacting bull that is apparently healthy and is kept isolated from the herd, except when his services are required, may be used with very slight risk to the cow, should she be tubercle-free, and with no risk to the calf." (M'Fadyean.)

The belief that tuberculosis in animals is frequently inherited is common among farmers, and there are few things more difficult than to get an old farmer to grasp the facts of the case. Even among the younger and better educated men there still lingers the belief that the predisposition is handed down though the actual disease may not be. Table A shows that out of the 4,186 calves slaughtered in Edinburgh in 1922, only one in 800, were tuberculous, and similar figures are obtained in every slaughter-house where inspection is thorough.

The most potent argument I know of to convince a sceptical farmer of the truth of these figures is to point out that a neighbour is receiving threepence per gallon more for his milk because of their truth. I regret to say that this argument makes them sit up and take notice when all others fail to arouse their interest.

It is in educating the farmer and stockowner how he may eliminate tuberculosis from his herd that veterinary surgeons may do their bit in the campaign against this scourge. Few farmers keep sufficiently accurate records to enable them to reckon how much they lose by the presence of this plague in their stock. If they did know they would face the problem resolutely. The majority of the public fail to grasp the point that ultimately this loss is borne by them in the prices they pay for meat and milk. While education may be sufficient for the progressive farmer, there are unfortunately some that need more than persuasion, and it is in dealing with them that the Tuberculosis Order of 1914 is sorely missed.

There is another aspect of this problem that affects us closely, and which is misunderstood by many farmers. I refer to tuberculin testing under conditions such as the following, viz.: an order is received by an auctioneer or dealer for a cow which has passed the tuberculin test, or a farmer with an infected herd sells a cow subject to passing the test. In the former case, the dealer has half a dozen cows tested and if lucky gets one to pass, or in the latter case the selected animal passes when tested. This animal, accompanied by the proper certificate, is then dispatched to the purchaser, who accepts it without misgiving. At a later date, when this animal is tested along with the other members of the herd, it is found to be the only one to react. The owner feels sore about the result; he condemns the tuberculin test, and in his haste may even include in his

condemnation the practitioner who carried it out. Laymen do not understand that after the act of infection there is a period during which the cow may not develop the power to react. This period, according to M'Fadyean, may be as long as seven weeks. The situation I have described has arisen more than once since recent legislation has increased the demand for tubercle-free cows, and practitioners must not forget to point out this great possibility when asked to test cows that have been exposed to infection. Isolation of the cow with two tests at two months interval is the only solution I can offer of this difficulty at present, and to the owner of a pedigree milk-record stock of cows this difficulty should prove a powerful incentive to eradicate the disease from his herd.

Bovine tuberculosis is one of the most urgent questions before our breeding societies to-day. Foreign countries as a rule require newly-imported stock to pass the tuberculin test at the port of disembarkation, and failure to do means great loss to the importer. This country has for a long number of years been the stock farm of the world, and breeders from all parts come here to obtain fresh blood. We are in danger of losing this position so far as cattle are concerned by our failure to eradicate tuberculosis from our pedigree herds. Importers will not continue to patronise this country when they can get the fresh blood they desire elsewhere and in addition have a guarantee that what they buy will pass the test on landing.

In America to-day the accredited herd plan is in operation and is under Government control.

The following is an excerpt from the *Veterinary Record* of 22nd September, 1923 :—

"*Tuberculosis Eradication in U.S.A.*—Gratifying progress has been made in the U.S.A., in the campaign for the eradication of tuberculosis. All the States are co-operating in this movement, and at the close of last year 16,216 herds had been accredited and over 100,000 additional herds had passed a first test without reactions. This widespread demonstration of the possibility of freeing individual herds from the disease has resulted in increased confidence in the area clean-up method. Already twenty-three States have joined in the movement.

"In these States, more than 150 Counties had completed or were in progress of testing all of their cattle, and nearly 300 more were making arrangements to begin work, Compared with the previous year, area testing has shown more than a ten-fold increase. The adoption of the area clean-up method has not only reduced the expense and increased the efficiency of the work, but the results already obtained have done much to strengthen the belief that bovine tuberculosis can be entirely eradicated. Conclusive evidence is already at hand showing that tuberculosis in swine arises principally from infected cattle, and that its elimination from the cattle on a given premises results in its gradual reduction in the hogs.

"Extensive surveys show that tuberculosis is only present in about one per cent. of the cattle in forty-two per cent. of the areas of the United States, and that in a large additional area it does not exceed three per cent. The remaining area is much more seriously affected, but the evidence at hand indicates that this costly disease will finally yield to the scientific methods now being employed."

In this country in a few years the list of Certified and Grade A. (tuberculin-tested) herds will form our accredited herd list. The case of the stockowner and breeder, who is not also a milk producer, would not be covered by this method of compiling the list. It really is a question for the herd societies to take up and make provision for all classes of their members. Unless some step of this nature is taken, our export trade in pedigree animals is bound to fall and the loss will be felt by our profession. Our interests are closely bound up with those of farmers, stockowners and breeders, and we cannot expect to prosper if agriculture fails to be a profitable industry.

The question of control by the Government over the manufacture and sale of tuberculin is one that has been raised many times. Such legislation is long overdue. Before the introduction of the ophthalmic test there was undoubted need of such control, but since the ophthalmic test is now always carried out simultaneously with the subcutaneous, the chances of successful faking are less. There still exists, however, the owner who tests his own cattle. At present, there would appear to be many farmers who do this. Should they be encouraged ? I do not think so, as I fear many of them, when they find the wretched state of their herds, will be tempted to repeat the test every two months, and so render their stock tuberculin-proof. This practice is probably carried out more often than one imagines. It is the only explanation that accounts for the large number of animals that pass the test on purchase only to fail when re-tested some months later after they have been added to the tubercle-free stock.

The report of the N.V.M.A. Committee on Distribution of Biological Products published in the *Record* of 8th September gives us ground for hoping that soon the production, standardisation, and distribution of tuberculin are likely to be under rigorous control.

The recent legislation dealing with milk has brought the question of freeing our herds from tuberculosis into prominence, and I feel it is a subject which should profitably engage our attention. It is purely a veterinary question with which, by our training and experience, we are particularly qualified to deal. I am certain that the elimination of tuberculosis from our herds is possible, but it will take a long time. The re-introduction of the Tuberculosis Order would mark a step in the right direction. and it is the clear duty of every veterinary surgeon to use his influence at this time with members of Local Authorities to support the effort that is being made to bring pressure on the Government to re-introduce this measure. This should be our chief endeavour at present, but we should be prepared with a plan for subsequent action. The form of this subsequent action is a matter for serious consideration.

You will remember that the order of 1913 was directed against the cow with tuberculosis of the udder and the bovine animal suffering from tuberculosis with emaciation. The Order of 1914, in addition to the foregoing, included any bovine animal which suffered from a chronic cough and showed definite clinical signs of tuberculosis.

In the present state of our country's finances we shall do well if we can resume the fight where it was

interrupted, with the Order of 1914 as our weapon. It will not be many years in operation, however, before its scope will require to be widened to include all bovines suffering from tuberculosis. To stop at the elimination of the clinical case would be a calamity when we remember the success that has attended the efforts of our profession in eradicating glanders by the use of mallein. The case of the apparently healthy animal that reacts to tuberculin will require to be tackled next if an advance is to be made. At this stage, there will be a natural tendency to evade this issue, as there is little immediate danger to the public health from such animals and farmers will feel that, in getting rid of the open cases, they have gone far enough. It is at this time that a national plan, like the American previously quoted, would play an important part, but to be effective such a movement would require to be started now. It will take a great deal of spade work among farmers and dairymen before a campaign of this nature can become general. A voluntary scheme is doomed; there must be some compulsion behind it to make it successful.

Some idea of the manner in which new methods are adopted by the dairy-farmer class may be got by looking at the history of Milk Recording in Scotland. Milk Recording has been described by one authority as the foundation of successful dairy farming, yet after twenty years propaganda there were only 691 owners having the produce of 27,275 cows recorded. This represents about six per cent. of the total number of cows in Scotland. These men are undoubtedly the most progressive in their districts, and an appeal to them to get rid of re-actors by any of the recognised methods would not fall on deaf ears. At present, in Lanarkshire, all the tubercle-free herds are also milk recorded, and it is hoped that before long the converse will be equally true.

At present, each practitioner should consider himself responsible for the spreading of the knowledge of tuberculosis elimination among his clients.

Elimination should be more easily carried out in country districts where herds are self-supporting than in town dairies where every animal is bought in. The latter present a difficult problem, but still not insoluble. In this connection I was interested to read, in a recent number of the *Record*, a letter on the prevalence of tuberculosis in Black Welsh Cattle. Reactors in that breed would appear to number under five per cent. I think that this percentage would be the average amongst any breed in a cattle-raising district remote from markets where the movement of mature cattle was from the district, and where the only old animals introduced were bulls. Such districts are getting fewer. Motor transport now affords such facilities for milk producers that districts which until recently were cattle-raising districts and cheese-making are now entirely dairying. Such cattle-raising districts form the reservoir which supplies the town dairy, and I feel that the country districts should be tackled first, and once they are clear the problem in town dairies will be more easily solved.

In the campaign towards elimination of tuberculosis from our herds, it is perhaps useless at present to look for Government assistance. It is this consideration—lack of money—that is postponing the re-introduction of the Tuberculosis Order, and though I feel that any money spent in tuberculosis elimination would be wisely invested from a national health point of view, it is too much to expect it at present. However, that need not deter us. I believe that in the solution of the problem of the elimination of tuberculosis from our herds there is a great work for the veterinarian, and one which would prove of incalculable benefit to our fellow-men. (Applause.)

TABLE A.

	1919.	1920.	1921.	1922.	Total No. of animals.
Cows	35·99	34·64	57·52	58·73	—
Other Cattle ...	2·95	4·24	3·45	4·42	—
Cattle (all classes)	9·98	7·30	7·70	8·69	27·748
Calves	·02	·05	·07	·14	4,186
Swine	3·72	4·54	6·31	5·03	11,369

TABLE B.

Surgical Tuberculosis	No. of cases.	Human	Bovine	% Bovine
Cervical Gland Tuberculosis	116	62	54	46·5
Bone and Joint do. (1)	476	389	87	18·3
Do. do. (2)	28	20	8	28·6
Lupus	126	62	64	50·8
Scrofulodermia ...	52	32	20	38·4
Genito Urinary do. ...	17	14	3	17·6

(1) England and Wales. (2) Scotland.

TABLE C.

		No. of Cases.	Human	Bovine	% Bovine
Examination of p.m. material, children	L.G.B.	113	93	20	17·7
	R.C.	46	27	19	41·3
Tuberculous Meningitis		12	10	2	16·6
Pulmonary Tuberculosis		229	226	3	1·3
Totals of "B" and "C"		1215	935	280	23·

DISCUSSION.

Mr. J. TAYLOR in opening the discussion said: There is one point which I would like to thank Mr. McGregor for bringing into his paper, and that is the subject of the dealer asking a practitioner to go into the market and examine a cow to see if she is free from tuberculosis. I myself have, unfortunately, had the experience of testing a cow under such conditions and hearing two or three months afterwards that that cow had gone down when re-tested. One often wonders whether the tuberculin used by the practitioner is the same tuberculin he has used, and consequently I think it would be a great advantage if tuberculin were standardised and controlled. Also in connection with the use of tuberculin, I should like to refer to the practice of faking calves from birth. I have known a case of a farmer who has put in as much as 10 cc's. of tuberculin into a calf. Now, I think that is ridiculous. Farmers should not use tuberculin to test their own cattle. I was reading the other day in the *Scotsman* the prices which were got for bull calves at the Aberdeen sales, and it did seem to me very peculiar

TABLE D.

Causes of death in Scotland in 1921. *Both Sexes.*

TUBERCULOSIS.	All ages.	—1	1—	5—	10—	15—	25—	35—	45—	55—	65—	75—	85—
Laryngeal Tuberculosis	24	—	—	1	—	6	4	5	4	2	2	—	—
Pulmonary ditto.	3946	16	56	61	121	1006	961	750	555	290	113	17	—
Tuberculous Meningitis	609	156	251	79	44	46	17	8	4	2	2	—	—
T.B. of Intestines and Peritoneum ...	493	59	146	60	50	70	41	28	14	18	5	2	—
Tuberculosis of Spine	108	1	4	17	12	28	12	10	13	5	3	2	1
Ditto Joints	57	1	7	7	3	9	8	2	13	1	5	—	1
Ditto Skin	18	1	—	—	2	2	1	2	3	3	3	1	—
Ditto Bones (except spine) ...	32	2	2	2	1	2	6	2	3	5	5	2	—
Ditto Lymphatic System (except Abdominal Glands)	16	1	4	1	2	2	1	—	1	2	1	1	—
Tuberculosis of Genito Urinary System ...	30	—	1	1	1	7	6	5	5	1	2	1	—
Ditto other Organs	21	1	3	2	1	1	3	1	3	1	4	—	1
Disseminated Tuberculosis Acute	93	20	29	10	9	14	5	3	3	—	—	—	—
Ditto ditto Chronic ...	290	9	33	29	24	67	42	29	28	25	4	—	—
Totals	5737	267	536	270	270	1260	1107	845	649	355	149	26	3

that a reacting bull started at 30 guineas and fetched 800 guineas at the finish. In another instance a bull which was a reactor was purchased for 250 guineas. I regard it as a most peculiar thing for a member of our profession to pay a price like that for a tuberculous bull, and it does not seem to me right that that bull should be brought into a tubercle-free herd of cows. I am not going to prolong the discussion, but there is one thing I want to bring to your notice, and that is in last night's *Dispatch* there was published a paragraph in which it was stated that the Lanark County Council had approached our Edinburgh magistrates asking them to co-operate with them in getting back the Tuberculosis Order, 1914, to help us to get this Milk and Dairies Bill in order. Of course, the trouble is that the Government say they have got no money, but I feel the time has come when we should put our heads together and get at our Local Authorities and our M.P's. to bring pressure to bear on the Government to enforce the Tuberculosis Order, because without it I feel that this Clean Milk Order cannot be worked. The dairy farmer cannot stand it unless he be a millionaire or a philanthropist. I feel that something should be done immediately, and I put it to this Meeting that some resolution should be brought up calling on the National Veterinary Association to try and force the Government's hands. I am sure there is money wasted in other departments which could be given to us and which would benefit the Veterinary Profession to a great extent, because horse practice is vanishing from our great cities. I thank you, gentlemen, for such a large attendance, and Mr. McGregor for the very able paper which he has put before us this afternoon. (Applause.)

Mr. J. BROWN: I do not believe very much in hereditary predisposition. I am quite certain if you take a shorthorn calf to-day it is better taken care of and reared under a better environment than most children. From the day it is born it never sees its mother except at feeding time and suckling time, and these calves can be reared without reacting to the tuberculin test. It is only when they come to the breeding stage and are put into the byre that these animals will react. Mr. Taylor was surprised that a reacting bull brought 800 guineas. It may have been one of the best breeding bulls in the herd that day. There is no doubt that bull may be put into a herd and sire calves that would be free from tuberculosis. In fact, some of the best breeding shorthorns we have had have been reactors. Mr. McGregor mentioned about the re-testing of cattle, which is a very important thing. I think every veterinary surgeon should refuse to test an animal in a public market. (Hear, hear.) That test is absolutely unreliable. Although it may mean that the veterinary surgeon may lose a fee, I think it is a pity that any veterinary surgeon should test cattle in a public market. Another thing I should like to mention is that even if cows are bought and put into fresh premises, they should not be tested until a fortnight or three weeks after they arrive there. As regards the re-testing, if we could get their owners to sign a paper and say when these animals had been previously tested, it would help us a great deal, because it is no use testing an animal that was tested a month previously. No animal should be tested until at least two months after it was previously tested. The Tuberculosis Order is right enough, but I do not think it goes far enough; it does not get rid of the very defective animal.

Mr. INGLIS: I think Mr. McGregor must be taken as an authority in a branch of this kind. There are two points with which we want to begin to eradicate this disease. We must do our utmost to have State control of the tuberculin, and until we have that established we have no control of tuberculosis in cattle. The Tuberculosis Order is one of the most useful things we can have: it gets rid of infectious centres, and unless we have a weapon of that kind we will never get owners to consent to anything that touches the pocket in the way of getting rid of bad animals. There are many pitfalls, gentlemen, for the practitioner. There are many cases where young animals as well as yearlings have been put down as having tuberculosis, and have been found to be absolutely free on *post-mortem*. We should do our utmost to get this Tuberculosis Order brought into force again, and until we have that we have no weapon to go by. (Applause.)

Mr. MEIKLE: Mr. McGregor spoke about the selfish view that some practitioners took by thinking that if they advise this tuberculin testing to go on that they would be doing themselves out of a job. I do not think there is any veterinary surgeon who can take up such a selfish view as that. Mr. Taylor was surprised, and I am also, that any veterinary surgeon should advise the use of a tuberculous bull. My own experience is that there is a good deal in predisposition, and suppose you use a tuberculous bull and keep it from being in contact with the

stock, I do not think that amounts to very much, because, after all, the bull is not in contact very much with his stock, and the predisposition is a character in the animal. That is one of the characters we ought to breed out, just as we breed the character in the animal of getting a bigger supply of milk. If an animal is tuberculous we can take it for certain he is more or less predisposed to that disease, and supposing we keep the stock from coming in contact with the parents who are affected, certainly they would never become infected with the disease, but it is an impossible thing to keep stock from coming in contact with the disease sooner or later. We get it from their coming in contact with human beings, and we also get them coming in contact with other animals who may happen to take disease to the stock. My view is this, that, since it is a character, why should we encourage farmers to breed with those animals that we know are affected? I would even go further than that. There is no doubt that this Tuberculosis Order is a good thing, and a step in the right direction, but from a financial point of view it is impossible for the ordinary dairy farmer. We should get every farmer who is using a bull to have tubercle-free one, when we can at any rate be sure that the calf will have one side of its parentage fairly healthy, and my opinion would be that, provided we selected a tubercle-free bull for use with a herd of these cattle, in time we would practically stamp out the disease, because predisposition comes in and it certainly would be stronger. But if you breed with a bull which is tuberculous, and mate it with a cow that is tuberculous, instead of weakening that predisposition you are strengthening it. It is, I think, easier for a farmer to get a tubercle-free bull than it is to get ten or a dozen tubercle-free cows. I also believe that it would be easier to make it compulsory for all breeders to have a tubercle-free bull.

Mr. GOFTON: As one would expect, having regard to the nature of Mr. McGregor's work, he naturally has paid a considerable amount of attention in his paper to the relationship of the bovine disease to human health, and I think it is a very, very important side of the question. Mr. McGregor has put in front of you some figures which indicate the cost in human life which is incurred on account of human infection from bovine sources. But I would like to add to that, and to point out that the figures Mr. McGregor has given you are only really the commencement of the story. He told us that there was one death every day in Scotland due to bovine tuberculosis. He also informed us that surgical tuberculosis—and bovine tuberculosis in man is chiefly surgical tuberculosis—was not always fatal. Now, one death per day in Scotland only represents a fraction of the damage that is done to human health on account of the bovine disease. (Hear, hear.) It is during the early years of life from 1 to 10, that bovine infection is mostly contracted by human beings. A proportion of these—probably a considerable proportion—who are affected either recover from the disease, or they die from some other disease which is intercurrent with the tuberculosis, and the death is therefore not recorded as due to tuberculosis. It is impossible to estimate the loss in human energy which results from the cases which do not die but which live for an indefinite period of time in a condition of more or less continuous ill-health. One has also to consider that the young children who recover start life with a very serious handicap. During the first eight or ten years of life they have contracted tuberculosis. The food they take in early years should go towards growth, development, and the building up of their strength. A great part of it, however, is used in resisting the attack of the tubercle bacillus instead of being used for the purposes for which it is properly intended. (Hear, hear.) So that I think, having regard to what one knows and sees of the injurious effects of bovine tuberculosis in man, one is compelled to urge that an effort should be made to reduce the incidence of this bovine disease, and particularly that a rigid control should be exercised over animals affected with tuberculosis in forms which are a danger to human life and health.

Mr. McGregor referred to the reduction in the incidence of tuberculosis in man, and there is a point in connection to which I want to refer. I can, myself, give no information on this point, and I doubt very much if the information is available. Roughly speaking, there has been in the last thirty or forty years a fall of 50 per cent. in the death rate from tuberculosis in man. It would be very interesting to learn to what extent, if any, bovine disease has been reduced in man. Has there been a corresponding fall in the bovine disease? Judging from what one knows of the bovine disease, and what little has been done in the way of lessening the risk of human infection, one might venture to assume that the percentage incidence of the bovine disease in man has been steadily increasing as the total death rate has fallen. In other words energy has been devoted wholly to reducing the sources of human infection and virtually nothing has been done to limit or reduce bovine infection. That is an important point, and if one could only get at the facts, I think they would illustrate quite clearly the very great need there is for a concentrated effort being made to attack bovine tuberculosis.

Mr. McGregor asked the question, when would we be able to show amongst animals a fall in the tuberculosis rate equal to that which has taken place in man? One may answer that by saying "so long as the present condition of inertia prevails we will never be able to show a fall in the incidence of bovine tuberculosis." (Hear, hear.) We have farmers—progressive farmers—who in their own interests, and possibly also in the general public interest, have laid themselves out to reduce and remove tuberculosis from their herds, but those are isolated instances. Farms of that kind are dotted here and there up and down the country, but their influence throughout the country as a whole is insignificant, and until very much more concentrated effort is made we are not going to be able to show anything which would account for a decimal point of reduction in the amount of tuberculosis in our herds.

Reference has been made to the Tuberculosis Order as a factor in reducing tuberculosis in the herds of the country. The Tuberculosis Order is a very valuable beginning, because it removes the cow which is most dangerous as a source of infection to her fellows and to man. But alone it is not going to carry us far, because

it only deals with those cows which have developed certain advanced types of tuberculosis. Until something more is done to deal with the cow which is not affected with those advanced forms of tuberculosis, but which is still a subject of tuberculosis, and capable of spreading infection, we will have year after year a series of cases cropping up which fall within the scope of the Order. In the first year of operating the Tuberculosis Order we might expect to get the largest number of animals falling within its scope, for the simple reason that we would have to deal with the accumulations, but in each succeeding year we would have approximately the same number of cases to deal with, because we would have done practically nothing to reduce the total incidence of the disease. Something more has to be done than can be effected by the Tuberculosis Order, but I do not think we are anywhere near the stage of trying to deal with tuberculosis on the lines along which glanders was ultimately dealt with and eradicated, or almost eradicated in this country. Mr. McGregor seemed to favour that idea—that a time would come very soon after reintroduction of the Tuberculosis Order when we would have to deal with the reactor, by slaughter with compensation. In my view, we have a very long way to go before we can deal with reactors upon these lines. In the case of glanders it was only at the last lap, when glanders was reduced to a very low incidence, that it became economically possible to deal with it by the slaughter of mallein reactors. I think it is very doubtful if, within the lifetime of anyone here, we will have reached a corresponding stage in dealing with tuberculosis.

Mr. Roy: In my opinion we start to get rid of tuberculosis at the wrong end altogether. I have been asked many times to test animals, and I found that the hygienic conditions at the farm were absolutely rotten. I knew very well that the people who were milking the cows were tuberculous. The milk was sent to Glasgow, and it was left lying open when I was testing it. I consider that the first step we should take is to see that our byres are constructed under hygienic conditions, that the animals have sufficient air space to live decently. For instance, in Arran the upper classes take to Arran as a resort during the summer; the conditions of many of the byres there simply amount to a quagmire. These people think that that is the place to get good milk. , I know byres that would take you up to the ankles in dung. Some have no windows. In winter they are closed up altogether, and they are dark all the time. Before you start testing these animals you should commence with the primary thing, namely, have proper conditions for the animals to live under. As regards the rearing of young stock, I think most of us know that round about the Lanarkshire district the housing is altogether ridiculous. You will probably find a dozen young animals living in a barn up to the knees in muck, with probably no ventilation, and the decomposition from the manure producing such a vitiated air that the animal itself is bound, if it is at all weakened, to contract the disease. In one byre alone, although the animals may apparently be quite healthy where I tested them, I think there were 63 cows, and the reaction there was about 63 per cent. The farmer said to me, "Your tuberculin is of no use here at all. I am certain the majority of these animals are all perfectly healthy." "Yes," I said, "I believe a lot of them are quite healthy," but I said, "Look at the conditions of your byre. Why not spend money and improve the conditions of your byre." He said, "I know there are far too many in here." At one end you had a lot of animals one to two years' old packed up in a corner with no light; at the other end they were milking the cows. One found the servants coming out dirty themselves, and the milk was dished out in there. In some of the byres in Glasgow I have seen the filth that comes off the milk, and it is something appalling. I think we should be more active and get at the Government to get byres fit for the cows to live in and you will get rid of tuberculosis as quickly that way as you will by separating and testing animals. There is no use testing animals until you can give them healthy places to live in. (Applause.)

Dr. Whitehouse: There are only one or two things to which I wish to refer—one is a practical consideration, and the other is rather theoretical. As regards the former, I do not think that it is possible to do any very extensive tuberculin testing of cattle so long as you retain the subcutaneous test. There is no time to get round. I figured it out in America. I think it would take fifteen years, with the whole profession doing nothing else, to test the whole of the cattle.

The other consideration was an American idea. I think somewhere about 1905 to 1908, an experiment was conducted which strongly showed the interchangeability of the human type and the bovine. It was not possible to inoculate human beings with small quantities of bovine bacilli and see if they did not turn out of the bovine type, but they quite succeeded in turning the human bacillus into the bovine. They have, however, stopped that investigation. I do not know whether they went on to something further, or whether it did not work out. I think it would be very nice if we research people would go into that question of whether the bovine will turn into the human type.

Mr. Roy: What I meant to convey to your minds was that these statistics brought out that, in the case of human tuberculosis, improved housing conditions had lessened the incidence, and that was my object of speaking of the conditions under which animals live. If we look back we find that human beings were forced to live under certain conditions, and the eradication of slums certainly has had a great tendency, in my opinion, towards reducing tuberculosis. And it is also established that it is the milk cow that is more prone to take tuberculosis than the feeding cattle, such as bullocks, because they are more in the open air than the milk cow. That is why I always contend that we should look more into the conditions under which animals live before we start on our scientific investigations.

Councillor Young: I am one of those unfortunate people who represent some few on the Town Council of Edinburgh, and my convener has just left, therefore I have been called upon, I suppose, to thank you for asking us here this afternoon to listen to so very excellent a paper, and to the very splendid discussion which has taken place after it. I have only been a year on the Public Health Committee, but I have learned a very great deal. I have learned of the enormous amount of work that your profes-

sion is doing for us in the City of Edinburgh, and that we have got excellent men at the job—more excellent men I do not think we could have than Messrs. Gofton and Jones, and their assistants, and we are delighted to know that we have such men in the City of Edinburgh. I do not think it would be beoming to me to interpolate any remarks on the subject at all, because I really know very little about it, but I do see the point, and I think it is the point which has been raised by our friend here, that if we have been able to diminish tuberculosis in our cities so enormously as we have done there is no reason why we should not be able to do something along other lines in dealing with the cattle. If you can improve the housing conditions of your animals in the same way as we have improved the housing conditions of our people, then I do not see why you should not in the near future eradicate practically all tuberculosis from animals. That, of course, assumes that you have the same powers as we have got under our various housing acts and our public health acts, and I see no reason why there should not be the same powers given to you as veterinary surgeons to see that the conditions under which the animals are living are improved as are given to our Medical Officer of Health to see that the conditions under which human beings are living are improved. The discussion has been most interesting to me. I have taken some voluminous notes and I will go back to my duties as town councillor much more fitted to try and accomplish the task which has been set me. (Applause.)

Mr. R. G. ANDERSON: I have noted the reference Mr. McGregor made to the veterinary surgeon in private practice. I agree with his remark that quite a number of veterinary surgeons think that if cattle were free from tuberculosis their own interests might suffer. That is not, I think, one that many veterinary surgeons would allow to influence their action or any advice they might give. Mr. Taylor referred to the town and country practitioners. His remarks implied that it was for the country practitioner to do something to educate the farmer as to the advisability and economic worth of freeing his herd from tuberculosis, and it really left the town practitioner with almost no scope in any course of education. I rather think it is the other way about, because I think if anything is to be done towards producing wholesale action in this respect we are dependent upon the impetus that must come from the town practitioner. In that respect one might refer for a moment to the Medical Profession. I mean to say, we as veterinary surgeons are all very keen on this matter, and we really have it on our conscience as a burden which we feel we ought to discharge, but one wonders whether the medical practitioner is fully alive to his responsibility in this matter? If he did his duty the consuming public would probably of themselves make a demand and also express willingness to help in anything that might bring about the desired result at an earlier date than we are able to think of at the present moment. Reference was made to the Tuberculosis Order, and I should just like to say that we quite frequently see resolutions passed at various places asking for its reintroduction. I myself moved at a meeting of the Convention of Royal Burghs two years ago that this should be done, but of course we know that nothing has been done so far. Some Government Order should be introduced making tuberculin only available to veterinary surgeons. I think, however, that veterinary surgeons might do something which would perhaps render that almost unnecessary. That is to say, veterinary surgeons who give a certificate based on the subcutaneous test know that their certificate is of no value, therefore why should we not say we will not give a certificate unless the ophthalmic test is used? In other words, why should not the Government in certain areas, where they have men of energy and good character with whom to deal, subsidise them to the extent of allowing them to come into possession of tubercle-free herds, which herds would act as a demonstration that the thing can be done, and that it is, in its effect, quite an economical and profitable subject with which to deal?

Mr. SPRUELL, Jun.: I do not think this question of tuberculosis can be properly tackled unless it is done by our County and our City officials in the way of a housing scheme. Most of us in our districts know that, if we had a clean herd in to morrow, it could not be kept clean owing to the surroundings and unhygienic conditions under which the animals would be living. Young stock, as Mr. Roy states, very often get very little attention. I would be all in favour of getting the Order of 1914 into operation again; it would be, to my mind, a first step. It would enable us to get our open cases out, and that would always be driving in the wedge to a certain extent. The third plan would be very much what Mr. Gofton suggested, and that would be some Government aid to those who were producing a Grade A Milk. I do not think it would be wise that the milk should be sold to the public at a higher price than tuberculous milk; the better way would be to put the good milk on at the price at which the whole of the milk was sold, but there should be a certain bonus with that better grade milk. If you put threepence a gallon on to the price, then it is certain that it would only get to the few people who are well enough able to prevent tuberculosis in their own homes. (Applause.)

Mr. MCGREGOR, in reply: I am very grateful to you for the manner in which you have received my paper. It was a great honour to me to be able to address both divisions, and one which I appreciate very much. My paper was purely for the West Society, and I might have gone deeper into the matter if I thought I would have an audience such as this. Regarding the criticisms made, many of the questions have been answered by subsequent speakers. Mr. Meikle talks of predisposition. I do not believe there is such a thing as predisposition to tuberculosis. The paper to which I would refer Mr. Meikle is a pamphlet written by Sir John M'Fadyean for the Royal Agricultural Society of England in 1910. The whole subject is discussed in Sir John's able manner. It is quite typical of the man. You can get it for 1s. 6d. from the Royal Agricultural Society of England, and I think it is the best 1s. 6d.'s worth you can buy to day. I have never known of an authentic case where a person has communicated tuberculosis to cattle.

Mr. GOFTON: Cattle are resistant to the human tubercle bacillus.

Mr. MCGREGOR: As regards using a tubercle-free bull on a reacting stock, I think you can breed from to-day onwards and you will not make any difference. Looking to the bull to do everything will not bring you very much further forward. I am very grateful to Mr. Gofton for

having referred to the subsequent action to be taken. After the Tuberculosis Order has been in operation for a number of years the question is bound to arise—what is the next step? That was really what was at the back of my mind when I wrote my paper. There is no need to wait until the Order is in operation before you consider that. Are we going to adopt Bang's method? If we do, twenty years hence we will be as far forward as Denmark is to-day. He had set-backs. Mr. Roy and Councillor Young brought up the question of housing. At first sight it looks as if the housing problem had a great deal to do with tuberculosis in cattle. It has, to this extent, that in a herd that is 50 per cent. reacting and 50 per cent. free, infection occurs more quickly. That is to say, the 50 per cent. that are free will become affected sooner in a badly ventilated place than they would if they were under ideal conditions. But under the eradication plans which are now being adopted, a farmer put up a small pen in his barn to rear his cows and the cost was infinitesimal, and the results were very satisfactory. The point is this, however, that the influence of housing on the production of clean milk is not as great as one would imagine; the important point is the personal factor. The authority for that is the work that has been done in the National Institute of Dairying at Reading. They have found that it is the personal factor that counts; it is not the byre, and while one would like to see very up-to-date and very sanitary byres for the cows, I feel they are not of primary, but of secondary, importance. The first point is to eliminate the agent which causes the disease, then you are making an advance. Take the question, to-day, of farms—lairds have not money to put out on their steadings, and the farmers have less, so that I do not think one can look for an improvement in the way of renewing buildings. I do not think it is economical to do so. We are all advising repairs. I am recommending what should be done to places every day of the week, but shortage of money is the difficulty.

Dr. Whitehouse has made reference to the American experiments of the Bureau of Animal Industry. In the matter of the differentiation of the type of organism we are really in the hands of bacteriologists and experts. Mr. Spruell brought up the question of housing. In that connection I can only emphasise Bang's experiments, which show that money for housing is not a *sine qua non*. I would like to bring out one further point. With so many people trying to build up tubercle-free herds, there is a suggestion made that the department with which I am connected should have a register, so that people who want animals which are out of herds which have been free of tubercle for a number of years, can get them. There is a proposal to start a registry of that kind, so that the possible buyer and the willing seller may be put into communication with each other. At present there is no market to which they can go to buy them, and they are dependent upon other people who have surplus animals to sell. The difficulty is to bring the person who has the animals to sell and the person who wants them into communication, and a register has been started to which veterinary surgeons can apply and ask who has got a cow to sell, or who has got a bull to sell, and so on. That register is in process of being completed. There is no question of fee in the matter; it is being done voluntarily.

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FOOT-AND-MOUTH DISEASE.

We hope our readers read very carefully the excellent article on foot-and-mouth disease which was reproduced in this paper from *The Times* last week. It would be difficult to find a clearer and better informed exposition of the present position and the reasons for the present policy of the Ministry of Agriculture. Such a statement was needed, and needed not least for the benefit of the Veterinary Profession. The general attitude of our profession towards the Ministry has been one of profound sympathy and loyalty, and more especially so towards Sir Stewart Stockman, whose position of responsibility and anxiety must be of as trying and arduous a nature as seldom falls to the lot of the head of a Government Department. There have been many instances, however, of veterinary surgeons writing to the lay press for the purpose of airing their personal views, and these views in too many cases have been antagonistic to the Ministry. We cannot too strongly deprecate the writing of these letters. The writers little realise the harm that is done and the evil influences which they exert in areas where farmers are distracted by the losses involved in the policy of slaughter. We know well enough in what contempt a doctor is held by his profession who, when there is a serious outbreak of smallpox, writes to the lay press casting doubt as to the efficacy of vaccination. Professional men, doctors and veterinary surgeons especially, must realise their responsibilities to the public as well as to themselves. They must use their influence—and it is very considerable indeed—for the public good.

Agriculture is suffering grievously, and we who are dependent upon it are suffering also. Little enough is heard of our troubles, but with markets closed, all movement of stock prohibited, and with the greater care and observation of stock, very little ordinary practice is obtainable, while added to these there is this constant slaughtering of animals which in ordinary times are at least potential patients. It is hardly to be wondered, therefore, that a few veterinary surgeons, anxious only for their own well-being,

should see in foot-and-mouth disease a prospect of increased work and increased income if by any chance the present policy of slaughter should be abolished. No doubt the disease can be treated, and treated successfully in the large majority of cases, but only at a great loss to the community and to agriculture in particular. We hope the public will not be influenced by these men, of whom some, no doubt, hold honest opinions, but some are tainted with the desire to benefit themselves out of the afflictions of others. Though we are far from living in a Utopia, yet we must keep ideals before us and try to attain them. Would life be worth living, would *anything* be worth while, if we had no ideal? Now, especially when trouble is around us on all sides, is the time to show ourselves to the public as men who are ready and willing to live a professional life, to follow professional ideals, and to sacrifice our own ends when this is necessary for the good of the country; for the interests of the country must always be supreme over the interests of the individual.

A motion by Mr. Roberts has been placed on the agenda of the N.V.M.A. Council meeting next week expressing support for the present policy of the Ministry of Agriculture, and Sir Stewart Stockman has promised to be present to meet the Council (which represents the profession), and make a statement on the subject. We have no hesitation in saying that the motion will be warmly supported by the Veterinary Profession throughout the country.

Royal College of Veterinary Surgeons.

OBITUARY.

HUBAND, THOS. A., Epsom. Graduated London, 31st March, 1881. Fellow, 21st October, 1890. Died 25th December, 1923. Aged 69.

Training Fifi.

A correspondent in India writes:

The following yarn was told me by one of our High Court judges the other day, and may be worth repeating.

Scene.—A veterinary surgeon's yard. Enter meek and mild old lady with fluffy dog.

Meets veterinary surgeon, who is big, bluff, and boisterous.

Old Lady.—"You are the dear good man who looks after our dumb friends? Well, 'Fifi' here is really too troublesome! Aren't you, dearie? She will not be clean about the house—you understand? Now if she were yours, what would you do for her?"

V.S.—(anxious to get away to see what won the 2.30)—"Oh, *that*—humph—lethal chamber."

Old Lady.—"Oh!—but do you think that my little darling could be taught to use one?"

Clinical and Case Reports.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases.

Castor Seed Poisoning in Cows.

By W. R. DAVIS, M.R.C.V.S., Enfield.

In a herd of fifty Shorthorn cows there occurred, during October last, several cases of diarrhœa, accompanied by loss of milk and of appetite. The animals quickly recovered and the trouble was put down to cold and to frosty grass. However, between November 4th and 9th, thirty-two of the cows became affected.

Symptoms.—Violent, copious, watery diarrhœa, extreme depression and weakness, difficulty in rising and coldness of the extremities and of the skin generally. The appetite was greatly diminished in most cases, and in some was absolutely wanting. The secretion of milk failed entirely in many of the cows and was reduced in all. Pulse respirations and temperature were not, as a rule, much disturbed. A few animals were very severely affected and exhibited colicy pains, great prostration and inability to rise without assistance. Rumination was in abeyance in all the affected animals.

Treatment.—This consisted in the exhibition of opium, aromatic chalk powder, alkalies, mucilage of tragacanth, and essential oil of peppermint and cajuput. The severe cases received stimulants (camphor in ether). All the animals, fortunately, recovered but many had wasted a good deal, and some even now have not come back to their milk properly. The cows stood in two rows, tail to tail, with a passage between them, and it is quite impossible to describe the condition of the byre during the six days the outbreak lasted, although men were almost constantly employed in cleaning up. The more severe cases were clothed and all were well bedded down with plenty of straw in an endeavour to keep them warm.

It was at once surmised that there was some irritant poison in the food and, as a first step, this was completely changed. The cows had been fed on hay and oat straw, chaff, middlings, grains, chat potatoes (well washed), bean meal, ground nut cake and cotton cake. They were now given hay, crushed oats and bran, and linseed cake. An analysis was made of the feeding stuffs and as a result it was found that the ground nut cake contained a percentage of castor seeds, and although this percentage was very small, it is certain that the outbreak was due to the cumulative action of the active principle in the castor seeds.

Remarks.—Castor beans, the seeds of *Ricinus Communis* (Euphorbiaceæ) yield, on pressure, castor oil, and the residue is made into a cake which is said to be employed sometimes for the adulteration of other cakes, especially ground nut and linseed cake. As pointed out by Frohner, the poisonous properties of castor cake are not related to its contents of castor oil, but to the presence of ricin—an extraordinarily

poisonous body contained in the seed cover. According to the same authority, ricin produces gastro-enteritis accompanied by intense weakness, somnolence, convulsions and coma. Its action results from its power of coagulating the blood in the small vessels of the intestines as a consequence of which there may be ulceration of the intestinal mucosa. When introduced subcutaneously, ricin is more poisonous than either prussic acid or strychnine. A marked feature of the poisonous properties of ricin is its cumulative action, so that, after feeding castor seeds for several days in non-poisonous quantities, only half the usual lethal dose is necessary to cause death. Ricin is a ferment and gives no chemical reaction by which its pressure can be detected. Suspected material is subjected to microscopical examination to determine the existence of characteristic particles of castor seeds.

Frohner states that veterinary literature contains many cases of poisoning among horses and cattle through feeding castor cake and adulterated oil cakes, and a hundred cases of poisoning of human beings from eating castor seeds.

The Veterinarian, 1898, contains an account of sixty-three cattle affected with violent diarrhœa from eating castor seeds mixed with beans, and Frohner gives a long list of cases among horses, cattle and swine.

Post-mortem.—This showed inflammation of the stomach and duodenum, acute diffuse nephritis, parenchymatous degeneration of the heart muscle and œdema of the lungs.

Hæmophilia.

By F. CHAMBERS, F.R.C.V.S., Wolverhampton.

In August, 1921, a Staffordshire bull terrier was brought to me in a state of collapse with the history that he was slowly bleeding to death. The dog was markedly emaciated, and his visible mucous membranes were extremely anæmic. At the back of the hock of the right hind leg was a small ulcer about 1 cm. in diameter, from which blood was slowly welling. There were no visible vessels implicated. This bleeding had been going on for some weeks. I tried the actual cautery without avail, and, believing that I had a case of hæmophilia to deal with, dressed the wound with Tr. benzoin Co., and covered the area with a thick pad of gauze and a bandage. A hypodermic injection of adrenalin 1-1000 was given. No further hæmorrhage took place and the dressing was removed in five days, when it was seen that the wound had healed. The dog rapidly gained condition, and in two months was as fat and fit as ever.

In June of this year (1923) the same dog was brought to me again with an ulcerating growth on his scrotum. This had been bleeding for two weeks and the dog was almost as emaciated as when I saw him the first time. The growth appeared to be a variety of papilloma, which was breaking down. It measured 4 cms. in diameter and implicated the skin only. A general anæsthetic was administered and the growth excised. The lips of the wound were approximated with closely-placed sutures of silkworm gut, and n injection of 2 cc's. adrenalin given. On recovering from the anæsthetic, an Elizabethan collar was placed round the dog's neck. The wound bled a little, but after being painted with Tr. benzoin Co. several times this soon ceased. The dog made a good recovery and is now in excellent condition.

The word "hæmophilia" has been used so loosely that it has almost come to mean profuse hæmorrhage from a trivial or unknown cause, but it is important to limit it to one class of case only. It should be limited to the family bleeding disease which only affects the males of a family, but in the animal world it is rarely that one can trace the other males of the same litter. The cause of the disease is quite unknown and there is no definite or constant pathological anatomy. The most reasonable explanation seems to be that the blood has developed a long coagulation period or that there may be defective coagulation due to the absence of calcium salts. It may be that, in the case described above, that there was an abnormal thinness and degeneration of the capillary and arterial walls, as evidenced by the excellent results following the injection of adrenalin.

Two Peculiar Cases.

By F. CHAMBERS, F.R.C.V.S., Wolverhampton.

During the last month I have seen two cases in which the sow had everted her uterus through the anus.

In the first one there was a prolapse of the rectum to the extent of six inches and from a rent in the ventral surface the uterus had been forcibly ejected. It was not inverted nor was the peritoneal covering in the least inflamed. The whole of the uterus was outside the body. This sow had pigged during the morning without any difficulty.

In the second case the eversion had taken place in exactly the same manner, only the sow had not farrowed and in the portion of the uterus that had been forced out the bodies of two pigs could be felt. Immediate slaughter was resorted to in both cases.

PERSONAL.

The list of candidates for the Fellowship of the Royal Society of Edinburgh includes the names of Mr. Charles Henry Wilkie, F.R.C.V.S., F.R.M.S., F.Z.S., of Brondesbury, his proposers being Mr. J. A. Gilruth, Major F. T. G. Hobday, Sir J. M'Fadyean and Dr. O. C. Bradley.

Mr. James Rowe writes to point out that, in the report of the last meeting of the Central Division, the date of his entrance to College was incorrectly given as 1868. Mr. Rowe took his degree in that year, having entered in 1865. The testimonial to which reference was made by Mr. Livesey was given forty-eight years ago, and not as stated, "nearly forty years ago."

The Royal College of Veterinary Surgeons.

LIST OF MEMBERS GRADUATED DECEMBER, 1923.

Alexander, Ronald Elward, Crosby Road, Waterloo, Liverpool	Dec. 19, 1923.	Livpl.
Atkinson, William Thomas Styan, M.C., 117 Upper Grosvenor Road, Tunbridge Wells	Dec. 18, 1923.	Edin.
Barrett, Eric Philip, Pleasant House, Gaywood, King's Lynn	Dec. 22, 1923.	Lond.
Boddie, George Frederick, 13 Torpkishen St., Edinburgh	Dec. 18, 1923.	Edin.
Bywater, H. E., 20 Cathall Road, Leytonstone, E. 11	Dec. 22, 1923.	Lond.
Clarke, Ernest Lionel, "St. Clear's," Kew Gardens, S.W.	Dec. 22, 1923.	Lond.
Coulter, Robert Arthur Stewart, "Epworth," Fintona, Co. Tyrone	Dec. 13, 1923.	Dub.
Crowley, Patrick, Leitrim, Cree, Co. Clare	Dec. 13, 1923.	Dub.
Devlin, William Andrew, Esson, Armoy, Co. Antrim	Dec. 18, 1923.	Edin.
Dobson, Norman, 16 Easby Mount, Bradford, Yorks.	Dec. 18, 1923.	Edin.
Eardley, Frederick John, Beech House, Poole, Dorset	Dec. 22, 1923.	Lond.
Eccles, Arnold, 4 Woodcroft Avenue, Broomhill, Glasgow	Dec. 15, 1923.	Glas.
Evans, John, 2 Pretoria Buildings, Bankyfelin, Carmarthen	Dec. 22, 1923.	Lond.
Fowler, Arthur, c/o J. B. Walker, Northcote, Slough, Bucks.	Dec. 22, 1923	Lond.
French, James Anthony, 11 Leinster Street (South), Dublin	Dec. 13, 1923.	Dub.
Gatfield, Edward Kempton, 65 Regent's Park Road, N.W.1.	Dec. 22, 1923.	Lond.
Goodall, Francis Welborn, 4 Grange Avenue, Reading	Dec. 22, 1923.	Lond.
Gourley, Samuel, Derryboy Cottage, Crossgar, Co. Down	Dec. 13, 1923.	Dub.
Grant, John Crombie, Station House, Cromdale, Morayshire	Dec. 18, 1923.	Edin.
Gravelle, Henry Luther, Groft House, Ashburnham Road, Pembrey, Carmarthenshire	Dec. 13, 1923.	Dub.
Grogan, John George Patrick, 60 Dartmouth Square, Dublin	Dec. 13, 1923.	Dub.
Hale, Frank Russell, 16 Hampstead Lane, Highgate, N. 6	Dec. 22, 1923.	Lond.
Heard, James, Calderhead Schoolhouse, Shotts.	Dec. 26, 1923.	Glas.
Hedley, Richard, 4 Heywood St., Moss Side, Manchester	Dec. 19, 1923.	Livpl.
Hobson, George, Kilcommon, Cahir, Co. Tipperary	Dec. 13, 1923.	Dub.
Holland, Harry Walter, Stonely House, Stonely, Hunts.	Dec. 22, 1923.	Lond.
Howell, Benjamin, "Cross," Dinas Cross, Pembs.	Dec. 13, 1923.	Dub.
Ireland, William Alexander, 10 Scene Gardens, Edinburgh	Dec. 18, 1923.	Edin.
Johnston, Donald, 96 Tottenham Lane, Hornsey, N. 8	Dec. 22, 1923.	Lond.
Kearney, John Kruger, 6 Harbour Terrace, Mullingar	Dec. 13, 1923.	Dub.
Kelly, John Anthony, Kilrush, Co. Clare	Dec. 13, 1923.	Dub.
Knight, (Miss) Edith Gertrude, Sexey's School, Bruton, Somerset	Dec. 19, 1923.	Livpl.
Lloyd-Jones, Thomas Dennis, 22 High St., Denbigh, N. Wales	Dec. 22, 1923.	Lond.
McKinney, David Fleck, "Edenbank," Broughshane Road, Ballymena, Co. Antrim	Jan. 17, 1924.	Dub.
Mackintosh, James, M.C., Embo House, Embo., Sutherland	Dec. 18, 1923.	Edin.
Moss, Bernard, 62 High Road, Buckhurst Hill, Essex	Dec. 22, 1923.	Lond.
Mullane, Francis Joseph, 6 Claude Road, Cardiff	Dec. 13, 1923.	Dub.
Munro, George Dods, 26 Findhorn Place, Edinburgh	Dec. 18, 1923.	Edin.
Munslow, Frederick Leslie, "Hollinshead Arms Hotel," Chorley	Dec. 19, 1923.	Livpl.
Norman, Edgar John Leslie, Glencoe, Chudleigh, Devon	Dec. 22, 1923.	Lond.
O'Beirne, John Joseph, Cooldow House, Kilmore, Drumsna, Co. Roscommon	Dec. 13, 1923.	Dub.
Ollerhead, Kenneth, 86 Park Avenue, Oswestry	Dec. 18, 1923.	Edin.
O'Malley, Patrick, Main St., Castlebar	Dec. 13, 1923.	Dub.
Panikkar, Mattacad Raman Vasudiva, Kanjirapalli, Travancore, S. India	Dec. 18, 1923.	Edin.
Pickup, Jack, "Trenandry," Granville Rd., Barnet	Dec. 22, 1923.	Lond.
Quinn, John Gerard, 2 Wilton Gardens, Glasgow, N.W.	Dec. 15, 1923.	Glas.
Randle, Caleb Sims, 27 Strafford Rd., Barnet	Dec. 22, 1923.	Lond.
Reid, David Torrance, Bridgend House, Dalry, Ayrshire	Dec. 15, 1923.	Glas.
Reid, John, Lawside, East Kilbride	Mar. 18, 1924.	Glas.
Robertson, Edward George, 107 Burscough St., Ormskirk	Dec. 19, 1923.	Livpl.
Rogan, George Ernest, 4 Victoria Terrace, Gregagh Road, Belfast	Dec. 13, 1923.	Dub.
Rutherford, Andrew Sibbald, Tweedsyde, Earlston	Dec. 18, 1923.	Edin.
Scott, Eustace Edward, 727 High Road, Leyton, Essex	Dec. 22, 1923.	Lond.
Scoular, Robert, Kirklea, Cambuslang, Glasgow	Dec. 15, 1923.	Glas.
Shirlaw, Jack Fenton, 94 Montpelier Park, Edinburgh	Dec. 18, 1923.	Edin.
Stewart, William Lyle, 6 Woodlands Terrace, Langside, Glasgow	Dec. 15, 1923.	Glas.
Trevers, Charles Trevers, Woodland Mount, Maghull, Liverpool	Dec. 19, 1923.	Livpl.
Walpole, Basil Orford Eric, "Burleigh," Cromwell Avenue, Highgate, N. 6	Dec. 22, 1923.	Lond.
Ward, Aubrey Ernest, Kensington House, The Grove, Slough	Dec. 22, 1923.	Lond.
Whitfield, Francis Sanderson, Red House, Durham	Dec. 18, 1923.	Edin.
Williams, John Douglas, 18 Highbury Crescent, N. 5	Dec. 22, 1923.	Lond.
Williams, Owen Lloyd, Croesallgo, Llanallgo, Menai Bridge, Anglesey	Dec. 22, 1923.	Lond.
Willing, Richard Rogers, Compton Marldon, Paignton, S. Devon	Dec. 22, 1923.	Lond.
Wilson, John William, Lucerne, Priory Road, Anfield	Dec. 19, 1923.	Livpl.
Woolley, Norman, 30 Sherwood Road, Great Crosby, Liverpool	Dec. 19, 1923.	Livpl.
Wright, John George, "Hawthorns," Hawthorn Avenue, Newport, Mon.	Dec. 22, 1923.	Lond.

Abstract.

The Vitamins in Milk.

There are at least three vitamins in milk—fat soluble A, water-soluble B and antiscorbutic C. The milk fat contains A; both the whole and skimmed milk contain B and C. C vitamin is always more variable in quantity than A and B, and there are about eight times more A than B vitamin. Green fodder supplies all the vitamins; dried fodder furnishes less vitamin A and very little of C. Hay, cut at the right time, and not exposed too long to the sun, contains both A and B, but C is considerably less in amount.

The feeding grains contain an abundance of B and a small quantity of A, but are deficient in C. The same applies to bran. Carrots and sugar beet contain A and B in quantities. Cotton seed cake contains an abundance of vitamin B and a relatively large amount of A.

Pasteurised milk contains less of the antiscorbutic vitamin C than unheated milk. Milk which has not been heated loses its antiscorbutic property by keeping. Neither heating nor keeping affect vitamins A and B.

[Source of the Vitamins in Milk, by Louis A. Klein; *School of Veterinary Medicine, University of Pennsylvania.* Abstracted from the *Journal of the American Veterinary Medical Association*, November, 1923.]

The Pan-Pacific Science Congress of 1923.

From a review of the Pan-Pacific Congress of 1923, by Professor O. U. Vonwiller, in the *Sydney University Recorder*, Vol. 3, No. 20, the following information, having special reference to the Veterinary Science Section, is gained:—

In 1920, under the direction of the American National Research Council, and under the auspices of the Pan-Pacific Union, there was held at Honolulu the first Pan-Pacific Science Congress. The main objects were two: (1) To discuss and promote concerted action in regard to scientific problems specially affecting the industrial progress, commercial interests, health and well-being of Pacific peoples; (2) to strengthen the bonds of peace among all the peoples around the Pacific by means of promoting a feeling of brotherhood among scientists and the maintenance of harmonious relations between the peoples of the Pacific regions.

For many years workers on scientific problems pertaining to the Pacific regions had realised, both in their isolation and in their occasional meetings, the necessity for some such general conference if their efforts were to produce the best results. At this conference, in which Australia, with six delegates, was one of seven countries represented, "stock was taken of the existing state of knowledge of the Pacific area, its geography and geology, its plants and animals, and the races of men which inhabit it, and proceeding from this comprehensive view it dealt in a broad manner with the outlines of schemes for future congresses and research."

It was decided that triennial congresses should be held in various important centres of the Pacific, and to New Zealand was given the opportunity of holding the congress of 1923. That Dominion being unable to do this, the meeting took place in Australia, liberal financial help given by the Commonwealth Government and the Governments of New South Wales and Victoria making this possible. As in the case of the meeting of the British Association in 1914, this meeting was divided into two parts, the first being held in Melbourne and the second in Sydney. All arrangements were made by the Australian National Research Council. In each city the University gave the use of its buildings for the Congress.

In several respects this conference showed a distinct advance over that of 1920; more countries were represented, and the number of visiting delegates was considerably greater, while there was an increase in the sections of science and applied science included, the meeting of 1920 being limited to geology, geography, botany, zoology, and anthropology, while on this occasion there were in addition sections on agriculture, veterinary science, entomology, forestry, geodesy, geophysics, and radio-telegraphy.

The formal work of the congress included several general discussions on subjects of wide interest, attended by all members, which were opened by leaders in various branches. In addition, there were joint discussions in which two or three sections met over some question of common interest, and lastly, various sectional meetings to consider matters of more specialised interest. Probably later we shall hear accounts of the work of the various sections; all who took an active part in these meetings express satisfaction at the results of the congress, and feel that it has been successful, taking as its objects those of the congress of 1920 mentioned earlier.

An inspection of the programme shows that many matters of vital importance to the countries represented, and to Australia in particular, were discussed, but whether any startling discoveries were announced, whether any new knowledge was imparted at the meetings or not, there can be no question concerning the tremendous benefit of the meeting to the workers in the various sciences concerned, and therefore the countries to which they belong. The main good done by such congresses is obtained in informal talks and discussions between workers on like subjects. The value of the help and encouragement obtained by the isolated workers in Australia by such intercourse with eminent workers in similar fields it is difficult to estimate, but there is no doubt that the inspiration of this congress will have a marked effect on scientific effort here for a long time to come.

Although one of the recently added Sections, that of Veterinary Science, proved to be among the most successful, for not only were the papers submitted of high standard, and contributed valuable knowledge relative to many problems connected with the development of Pacific regions, but the attendance was good and the discussions very interesting. The great value of the congress in giving an opportunity for free exchange of opinion among scientific workers located in different countries was well exemplified.

(To be continued.)

Notes and News.

The Editor will be glad to receive items of professional interest in these columns

NOTICE TO DIVISIONAL SECRETARIES.

The Editorial Committee, wishing to be of assistance to the divisions, and with a view to achieving uniformity in the reports of meetings, and acceleration in their publication in the *Record*, are prepared to send their representative to report their proceedings.

Will Secretaries of divisions, wishing to avail themselves of this offer, forward particulars as to dates, times, and places of meeting to the Editor, 10 Gray's Inn Square, W.C.1, at least a month prior to such meetings, when the scale of charges will be forwarded to them?

Diary of Events.

Jan. 3rd—Meeting of the Central Division at 10 Red Lion Square.

Jan. 8th—Meeting of the Derbyshire Division at the Royal Hotel, Derby.

Jan. 9th—N.V.M.A. Council and Committees: Biological Committee at 11-30 a.m. at 10 Gray's Inn Square. Other meetings in the afternoon at 10 Red Lion Square.

Jan. 10th—Mid-West and South Wales Meeting at Hereford.

Jan. 10th and 11th—R.C.V.S. Council and Committees.

Jan. 16th—South Eastern Division, Annual Meeting and Dinner at Tunbridge Wells.

Jan. 25th—Royal Counties Division Meeting at Reading, followed by Annual Dinner.

Feb. 8th—Midland Division, Annual General Meeting at Birmingham.

The Provisional Committee will be appointed by the Council next week, and the first meeting will be held at the end of January or beginning of February. They will at once begin making preparations for the Congress to be held at Aberdeen, and one of the first matters to be considered will be the subjects of the papers to be read and the persons who might be invited to contribute them. Any member of the Association may offer a paper or make suggestions as to suitable subjects. The General Secretary would, therefore, be pleased to receive as soon as possible any suggestions or to hear of any member wishing to bring forward any particular matter for discussion, so that he may be in a position to advise the Committee accordingly.

* * * *

Our new carpet is now laid down, thanks, in the first place, to the gift of Major Simpson, and in the second place to the energy of Mr. Jack Willett, who has been stretching it and nailing it down in the most approved manner. The room is now almost completed, and at any rate will be in a decent condition for the Committee meetings next week. We hope that every member will make a point of calling at the office whenever he may be in London, and see what a suitable and pleasant headquarters we now possess.

* * * *

We regret to hear of the serious accident to Captain Bennet, M.R.C.V.S., the well-known amateur rider, who was thrown heavily by the fall of his mount Ardeen in a steeplechase at Wolverhampton, on Thursday, December 27th. At the time of going to press (January 1st) we understand that Captain Bennet is still unconscious at the Wolverhampton General Hospital, but that his condition is improving.

* * * *

Nominations for the Council of the Royal College now include the names of Mr. C. Blackhurst, Professor J. B. Buxton, Sir J. M'Fadyean, Mr. W. D. Rees and Mr. J. Willett.

Royal College of Veterinary Surgeons.

RESULTS OF EXAMINATIONS, DECEMBER, 1923.

LIVERPOOL.

Class D.

Alexander, R. E.	Robertson, E. G.
Hedley, R.	Trevers, C. T.
Knight, Edith G. (Miss)	Wilson, J. W.
Munslow, F. L.	Woolley, N.

GLASGOW.

Class A.	*Class B.*
Glen, D.	Gilman, F. J.
Robb, A. H.	Herratt, J.
Spence, J. A.	Lauder, J.
Class C.	*Class D.*
Buchanan, J.	*Eccles, A.
Dyet, J. C.	Heard, J.
Ford, A. C.	Quinn, J. G.
Hunter, A.	Reid, D. T.
Land, F.	Reid, J.
Leask, R. I.	Scoular, R.
Mitchell, J.	Stewart, W. L.

* Denotes 2nd Class Honours.

Foot-and-Mouth Disease Policy.

A private conference between a small committee representing the Cheshire branch of the National Farmers' Union and the Cheshire Chamber of Agriculture, and Sir Stewart Stockman and Sir Francis Floud, representing the Ministry of Agriculture, met at Crewe on Tuesday to consider the question of the slaughter policy as a means of coping with the outbreak of foot-and-mouth disease in Cheshire.

It was decided that in the meantime the slaughter regulations are to be rigidly enforced, but branch meetings of the National Farmers' Union, and also of the Chamber of Agriculture, are to be held that week throughout the county at which members of those organisations would vote whether slaughter was to continue or not.—*The Times.*

C.B. for Colonel Sawyer.

We are glad to see that the New Year Honours List contains the name of Colonel H. T. Sawyer, D.S.O., M.R.C.V.S., who has been awarded the C.B. (Military Division). Colonel Sawyer is Director of Veterinary Services, India Headquarters Staff, East Indies.

(Continued in second column of next page.)

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.
All correspondence must bear the name and address of the contributor for publication.
The Editor does not hold himself responsible for the opinions of his correspondents.

Branch Veterinary Associations preserving their Individuality.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Noticing a recent reference to the above subject in the *Veterinary Record*, I wish to say that I consider it is quite compatible and, in fact, desirable that branches should preserve their individuality whilst remaining branches of the main body—The National Veterinary Medical Association.

Individual members (without becoming presumptive or obnoxious) can preserve their individuality, as members of any association or society, and do excellent work for the same. If the policy of any member is constructive—not destructive—any society is aided by its members' work. The thanks of the Veterinary Profession are due to its pioneers in every section, and the N.V.M.A. is, more especially, very much indebted to Emeritus Professor Gofton, F.R.C.V.S. for his excellent services in the past years.—Yours faithfully, J. D. POTTIE, M.R.C.V.S.

We have been asked to publish the following :

TO THE MEMBERS OF THE VETERINARY PROFESSION.

Sir,—

Re Foot-and-Mouth Disease.

The Royal Agricultural Society of England, the National Farmers' Union, the British Dairy Farmers' Association, and many other influential bodies concerned with the welfare of the livestock industry, have passed resolutions supporting the Government policy of slaughter for the eradication of foot-and-mouth disease from these islands. There is no doubt that the official Veterinary Surgeons are responsible for that policy and its execution, and if they fail the discredit of the failure will be laid at the door of the whole profession. But, judging by the silence of the profession as a whole, one is forced to the conclusion that this is no matter for the profession to take any active interest in. Several individual members of the profession have, however, made communications on the policy of the Government to the lay press. But in the majority of instances their opinions or observations have done more to enlist opposition than to gain adherence to the measure. This is unfortunate, because it has encouraged many papers to scatter broadcast the idea that the Veterinary Profession is inexperienced in, or incapable of carrying out, bacteriological or scientific research, and does not possess sufficient scientific knowledge to enable it to cope with the malady. Again, certain widely-read papers have inferred that the Medical Profession, by offering its services, is better equipped to investigate the disease, and to suggest more up-to-date methods of dealing with it. Furthermore, other influential papers, such as the *Morning Post*, have put forth that in past outbreaks the *lay* inspectors dealt with the disease more promptly and successfully than the veterinary inspectors, who have *now* absolute control in the present widely-spread outbreak.

The profession has for a very long period been clamouring for better recognition and to have its powers or services extended by Government departments. But what steps has it taken to strengthen the hands of the Government in the present grave crisis ? The veterinary press and veterinary societies are absolutely silent about the question, and the profession is, I believe, losing a great opportunity of making itself heard, even if only to support the action of that section of the profession which is at present involved in the arduous task of suppressing the disease.

Is it not advisable to call, without delay, a representative meeting of the profession to discuss the policy of the Government and, if thought advisable, to support the slaughter method ?—I am, dear Sir, Yours faithfully, HENRY GRAY, 1 Redfield Lane, S.W.5.

December 15th, 1923.

The Editor begs to acknowledge the receipt of the following :—

Communications from Messrs. D. Buchanan, J. Cameron, L. C. Maguire, W. Lothian, H. W. Scott and Professor J. D. Stewart.

Midland Counties Division meeting report from Mr. A. J. Dawes, Hon. Secretary; West of Scotland Division report from Mr. G. Weir, Hon. Secretary.

(*Continued from previous page.*)

Fees under the C.D.A. Acts.

The following scale of fees was held over, owing to lack of space, from Col. W. T. Olver's communication upon this subject, which appeared in the *Record* of December 22nd.

COUNTY OF WARWICK.	£	s.	d.
For first inspection and report on contagious disease (except as otherwise provided) ...		15	0
For first inspection in Anthrax, to include examination of blood, sending samples to the Ministry of Agriculture and Fisheries, if necessary, and report	1	1	0
Second and subsequent inspection and report, including Mange (except as otherwise provided)		5	0
For packages of such samples			6
For first and final inspection in Sheep Scab, each	1	1	0
Intermediate monthly inspection		10	6
Testing for Glanders, including the necessary Mallein, and report		10	6
Second or any number of tests carried out at the same time, each		2	6
For every other inspection when required, including the inspection in a supposed case of Pleuro-pneumonia		5	0
For inspecting every Market, Fair, Sale or Exhibition (mileage extra)	1	1	0
For every Post-mortem Examination and report	1	1	0
Attending Meeting of Sub-committee when required		10	6
For every Certificate required for a Movement Licence, but not to exceed 3s. for any number of Certificates relating to cases inspected on the same day			6
For valuation of an animal, horse, ass or mule slaughtered by order of the Local Authority or Sub-Committee		5	0

N.B.—When the Inspector is entitled to the fee of £1 1s. 0d. for Post-mortem Examination, he is not entitled to the fee for inspection.

Travelling expenses if under one mile from place of business *nil*, if over one mile, 1s. 6d. per mile, one way only, to be reckoned from *the end* of the first mile. Fractions of a mile to be reckoned as a mile.

The Ministry has agreed to a proposal of the Department of Agriculture for Ireland that pedigree animals imported from the Free State into Great Britain should be exempted from the provisions of the Irish Animals (Marking) Order of 1923. Port Inspectors have been instructed to allow exemption in cases where application is made in respect of an animal marked by a herd book number, or otherwise shown to be a pedigree animal. In effect, the evidence required will be a certificate from the Department's port supervisor, or veterinary inspector in charge at the port of shipment, that the animal is a *bona-fide* pedigree animal.

A novel method of ascertaining the guilt of dogs was disclosed in a prosecution for sheep-worrying at Battle. The police administered an emetic to two suspected dogs, one of which returned a ball of sheep wool. The magistrates made an order for the destruction of the dog.